CLAIMS

1   1.   A method in a computer system for importing data into a data

2 store, the method comprising:

3   for each of a plurality of types of import sources, defining import

4 metadata that specifies how the import data of that type of import source is to be

5 imported into the data store;

6   receiving import data to be imported into the data store, the import

7 data including an indication of a type of import source;

8   retrieving the metadata defined for the type of import source; and

9   importing the import data into data store in accordance with the

10 retrieved metadata.

1   2.   The method of claim 1 wherein the metadata for a type of

2 import source specifies a schema for a portion of the data store into which the

3 import data of that type is to be imported.

1   3.   The method of claim 1 wherein the metadata for a type of

2 import source specifies dimension and fact tables of the data store into which the

3 import data of that type is to be imported.

1   4.   The method of claim 3 wherein the dimension and facts tables

2 are dynamically created when importing data.

1   5.   The method of claim 1 wherein a type of import source

2 represents companies in a similar market.

1   6.   The method of claim 1 wherein each import source is a
2 different company.

1   7.   The method of claim 1 wherein each import source represents
2 organizations that generate similar types of data.

1   8.   The method of claim 1 including modifying the metadata for a
2 type of import source so that, when import data of that type of import source is next
3 imported, it is imported in accordance with the modified metadata.

1   9.   A computer-readable medium containing a data structure
2 having metadata relating to importing import data into a data store, the data
3 structure comprising:
4   for each table into which import data is to be imported,
5   an indication of a table name; and
6   for each property to be included as a column of the table,
7   an indication of a name of the property;
8   an indication of a field of the import data; and
9   an indication of how a value for the property of the table
10 is to be calculated from the indicated field of the import data.

1   10.   The computer-readable medium of claim 9 containing different
2 indications for each type of import source of import data.

1   11.   The computer-readable medium of claim 9 wherein the
2 indications are used to dynamically generate tables of the data store when import
3 data is imported.

1   12.   The computer-readable medium of claim 9 wherein the data
2   structure further includes for each table an indication as to whether a parent table in
3   the data store is to be updated based on import data.

1   13.   The computer-readable medium of claim 12 wherein when a
2   parent table is to be update the data structure includes an indication of how the
3   parent table is to be updated.

1   14.   The computer-readable medium of claim 9 wherein the data
2   structure further includes for each table an indication as to whether an additional
3   column is to be added to the table to reflect visit information.

1   15.   The computer-readable medium of claim 9 wherein the data
2   structure further includes for each property an indication of whether a lookup table
3   should be generated for the import data of that property.

1   16.   The computer-readable medium of claim 9 wherein the data
2   structure further includes for each property an indication of whether the import data
3   for that property should be grouped into buckets.

1   17.   The computer-readable medium of claim 9 wherein the data
2   structure further includes for each property an indication of whether the import data
3   for that property should be included in a hash value.

1   18.   The computer-readable medium of claim 9 wherein the data
2   structure further includes for each property an indication of whether the import data
3   for that property should be included in a key.

1   19.   A method in a computer system for importing import data into

2 a data store, the method comprising:

3   providing metadata that defines a schema for the data store and

4 defines how the import data is to be stored in the data store;

5   receiving import data to be stored in the data store;

6   after receiving the import data, generating the data store in accordance

7 with the schema defined by the provided metadata; and

8   storing data into the generated data store in accordance with how the

9 import data is to be stored in the data store as indicated by the provided metadata.

1   20.   The method of claim 19 wherein the schema specifies fact and

2 dimension tables to be included in the data store.

1   21.   The method of claim 19 including providing modified metadata

2 with a modified schema wherein when import data is subsequently received the

3 generated data store is modified in accordance with the modified schema.

1   22.   The method of claim 19 including providing metadata for a

2 plurality of different types of import sources wherein import data is imported in

3 accordance with the metadata for the type of import source of the import data.

1   23.   The method of claim 19 wherein the metadata includes an

2 indication of a name of each table of the data store.

1   24.   The method of claim 23 wherein the metadata includes for each

2 table of the data store an indication of each property of the table.

1   25.   The method of claim 24 wherein the metadata includes an
2 attribute for each property indicating whether a lookup table should be generated for
3 that property when import data is imported.

1   26.   The method of claim 24 wherein the metadata includes an
2 attribute for each property indicating whether that property should be included in a
3 hash value.

1   27.   The method of claim 24 wherein the metadata includes an
2 attribute for each property indicating whether that property should be included in a
3 key.

1   28.   The method of claim 24 wherein the metadata includes an
2 attribute for each property indicating whether a value for that property should be
3 derived from a related dimension table.

1   29.   The method of claim 24 wherein the metadata includes an
2 attribute for each property indicating whether the import data for that property
3 should be grouped into buckets.

1   30.   A method in a computer system for transforming data stored in
2 a data store, the method comprising:
3   providing metadata that defines a schema for a transformed data store
4 and defines how the data in the data store is to be transformed;
5   generating the transformed data store in accordance with the schema
6 defined by the provided metadata; and
7   storing data into the generated transformed data store in accordance
8 with how the data in the data store is to be transformed and stored in the
9 transformed data store as indicated by the provided metadata.

1   31.   The method of claim 30 wherein the schema specifies fact and

2 dimension tables to be included in the transformed data store.

1   32.   The method of claim 30 wherein the metadata includes an

2 indication of a name of each table of the transformed data store.

1   33.   The method of claim 30 wherein the metadata includes for each

2 table of the transformed data store an indication of each property of the table.

1   34.   The method of claim 33 wherein the metadata includes an

2 attribute for each property indicating whether that property should be included in a

3 hash value.

1   35.   The method of claim 33 wherein the metadata includes an

2 attribute for each property indicating whether that property should be included in a

3 key.

1   36.   A method in a computer system for aggregating data of a data

2 store, the method comprising:

3   for each of a plurality of different aggregations of the data store,

4 providing metadata that defines the aggregation, the metadata including an

5 indication of an aggregating property of a dimension table of the data store and one

6 or more measures to be included the aggregation, each measure being derived from

7 a fact table of the data store;

8   receiving an indication to aggregate the data of the data store in

9 accordance with an aggregation;

10   retrieving the provided metadata for that aggregation; and

11   aggregating the data of the data store in accordance with the retrieved

12 metadata.

1   37.   The method of claim 36 wherein the metadata includes an

2 aggregation function for each measure of the aggregation, the aggregation function

3 indicating how to aggregate the data of the data store for that measure.

1   38.   The method of claim 36 wherein the data is aggregated into a

2 table with one column for the aggregating property and for each measure indicated

3 by the provided metadata.

1   39.   A method in a computer system for storing data generated by a

2 plurality of web sites in a data store, the method comprising:

3   providing for each web site, metadata that defines structure of the

4 tables of the data store into which the data of that web site is to be stored and

5 defines how the data of the web site is to be stored in the tables;

6   receiving data from each of the plurality of web sites; and

7   for each web site from which data is received,

8   retrieving the metadata provided for that web site;

9   creating tables of the data store in accordance with the

10 retrieved metadata; and

11   storing data in the created tables in accordance with the

12 retrieved metadata and the received data.

1   40.   The method of claim 39 wherein the received data includes

2 indications of events identified by parsing click stream data generated for the web

3 site.

1   41.   The method of claim 39 wherein the received data includes

2 information on items available to be purchased via the web site.

1   42. The method of claim 39 wherein the received data includes
2 information relating to users of the web site.

1   43. The method of claim 39 wherein the stored data for a web site
2 is accessible by a representative of the web site through a hosted service provider.

1   44. A method in a computer system for storing data generated by a
2 plurality of web sites in a data store, the method comprising:
3   providing for each web site, metadata that defines structure of the
4 tables of the data store into which the data of that web site is to be stored and
5 defines how the data of the web site is to be stored in the tables;
6   receiving data from each of the plurality of web sites, the data
7 including click stream data and non-click stream data; and
8   for each web site from which data is received,
9   retrieving the metadata provided for that web site;
10   creating tables of the data store in accordance with the
11 retrieved metadata; and
12   storing data in the created tables in accordance with the
13 retrieved metadata and the received data wherein the click stream data is correlated
14 with non-click stream data.

1   45. The method of claim 44 wherein the received data includes
2 indications of events identified by parsing click stream data generated for the web
3 site.

1   46. The method of claim 44 wherein the non-click stream data
2 includes information on items available to be purchased via the web site.

1   47.   The method of claim 44 wherein the non-click stream data
2   includes information relating to users of the web site.

1   48.   The method of claim 44 wherein the stored data for a web site
2   is accessible by a representative of the web site through a host service provider.

1   49.   A computer-readable medium containing instructions for
2   controlling a computer system to import data, by a method comprising:
3   providing import metadata that specifies how import data for a
4   plurality of types of import sources is to be imported;
5   receiving import data to be imported, the import data having an
6   indication of a type of import source;
7   retrieving the metadata defined for the indicated type of import
8   source; and
9   importing the import data in accordance with the retrieved metadata.

1   50.   The computer-readable medium of claim 49 wherein the
2   metadata for a type of import source specifies a schema for a portion of a data store
3   into which the import data of that type is to be imported.

1   51.   The computer-readable medium of claim 49 wherein the
2   metadata for a type of import source specifies dimension and fact tables of a data
3   store into which the import data of that type is to be imported.

1   52.   The computer-readable medium of claim 51 wherein the
2   dimension and facts tables are dynamically created when importing data.

1   53.   The computer-readable medium of claim 49 wherein a type of
2   import source represents companies in a similar market.

1   54.   The computer-readable medium of claim 49 wherein each
2   import source is a different company.

1   55.   The computer-readable medium of claim 49 wherein each
2   import source represents organizations that generate similar types of data.

1   56.   The computer-readable medium of claim 49 including
2   modifying the metadata for a type of import source so that, when import data of that
3   type of import source is next imported, it is imported in accordance with the
4   modified metadata.

1   57.   A computer system for importing import data into a data store,
2   comprising:
3   a metadata store containing metadata that defines a schema for the
4   data store and defines how import data is to be stored in the data store;
5   an import data store containing import data to be stored in the data
6   store;
7   a data store generating component that generates the data store in
8   accordance with the schema defined by the metadata in the metadata store; and
9   a storing component that stores data into the generated data store in
10   accordance with how the import data is to be stored in the data store as indicated by
11   the metadata in the metadata store.

1   58.   The computer system of claim 57 wherein the schema specifies
2   fact and dimension tables to be included in the data store.

1   59.   The computer system of claim 57 wherein the metadata store
2   includes modified metadata with a modified schema wherein when import data is

3   subsequently imported the generated data store is modified in accordance with the
4   modified schema.

1   60.   The computer system of claim 57 wherein metadata for a
2   plurality of different types of import sources is provided and wherein import data is
3   imported in accordance with the metadata for the type of import source of the
4   import data.

1   61.   The computer system of claim 57 wherein the metadata
2   includes an indication of a name of each table of the data store.

1   62.   The computer system of claim 61 wherein the metadata
2   includes for each table of the data store an indication of each property of the table.

1   63.   The computer system of claim 62 wherein the metadata
2   includes an attribute for each property indicating whether a lookup table should be
3   generated for that property when import data is imported.

1   64.   The computer system of claim 62 wherein the metadata
2   includes an attribute for each property indicating whether that property should be
3   included in a hash value.

1   65.   The computer system of claim 62 wherein the metadata
2   includes an attribute for each property indicating whether that property should be
3   includes in a key.

1   66.   The computer system of claim 62 wherein the metadata
2   includes an attribute for each property indicating whether a value for that property
3   should be derived from a related dimension table.

1   67.   The computer system of claim 62 wherein the metadata

2   includes an attribute for each property indicating whether the import data for that

3   property should be grouped into buckets.

1   68.   A computer-readable medium containing instructions for

2   controlling a computer system to aggregate data, by a method comprising:

3   providing metadata that defines the aggregation, the metadata

4   including an indication of an aggregating property of a dimension table and one or

5   more measures to be included the aggregation, each measure being derived from a

6   fact table; and

7   aggregating the data in accordance with the provided metadata.

1   69.   The computer-readable medium of claim 68 wherein the

2   metadata includes an aggregation function for each measure of the aggregation, the

3   aggregation function indicating how to aggregate the data of the data store for that

4   measure.

1   70.   The computer-readable medium of claim 68 wherein the data is

2   aggregated into a table with one column for the aggregating property and for each

3   measure indicated by the provided metadata.

1   71.   A computer system for storing data generated by a plurality of

2   web sites in a data store, comprising:

3   metadata storage means for storing metadata that defines structure of

4   tables of the data store into which the data of a web site is to be stored and that

5   defines how the data of the web site is to be stored in the tables;

6   data storage means for storing data for each of the plurality of web

7   sites; and

8   means for retrieving the metadata for a web site, for creating tables of

9   the data store in accordance with the retrieved metadata, and for storing data in the

10   created tables in accordance with the retrieved metadata and the data of the data

11   storage means.

1   72.   The computer system of claim 71 wherein the data in the data

2   storage means includes indications of events identified by parsing click stream data

3   generated for the web site.

1   73.   The computer system of claim 71 wherein the data in the data

2   storage means includes information on items available to be purchased via the web

3   site.

1   74.   The computer system of claim 71 wherein the data in the data

2   storage means includes information relating to users of the web site.

1   75.   The computer system of claim 71 wherein the stored data in the

2   created tables for a web site is accessible by a representative of the web site through

3   a host service provider.

4   76.   The method of claim 1 wherein the metadata optionally

5   specifies a subset of fields of the input data that is to be imported.